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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/518,737

07/30/2005

Andrew James Gallant

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EXAMINER

HA, NGUYEN T

ART UNIT

PAPER NUMBER

2831

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PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/518,737	<b>Applicant(s)</b> GALLANT, ANDREW JAMES	
	<b>Examiner</b> Nguyen T. Ha	<b>Art Unit</b> 2831	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 30 July 2005.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-4 and 31-49 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-4 and 31-49 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                  | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## **DETAILED ACTION**

### **Introduction**

1. The examiner acknowledges the applicant's submission of the amendment dated 5/17/2006. At this point, claims 5-30 have been canceled, claims 31-49 have been added. Thus claims 1-4, and 31-49 are pending in the instant application.

### **Specification**

2. The following guidelines illustrate the preferred layout for the specification of a utility application. These guidelines are suggested for the applicant's use.

#### **Arrangement of the Specification**

As provided in 37 CFR 1.77(b), the specification of a utility application should include the following sections in order. Each of the lettered items should appear in upper case, without underlining or bold type, as a section heading. If no text follows the section heading, the phrase "Not Applicable" should follow the section heading:

- (a) TITLE OF THE INVENTION.
- (b) CROSS-REFERENCE TO RELATED APPLICATIONS.
- (c) STATEMENT REGARDING FEDERALLY SPONSORED RESEARCH OR DEVELOPMENT.
- (d) THE NAMES OF THE PARTIES TO A JOINT RESEARCH AGREEMENT.
- (e) INCORPORATION-BY-REFERENCE OF MATERIAL SUBMITTED ON A COMPACT DISC.
- (f) BACKGROUND OF THE INVENTION.
  - (1) Field of the Invention.
  - (2) Description of Related Art including information disclosed under 37 CFR 1.97 and 1.98.
- (g) BRIEF SUMMARY OF THE INVENTION.
- (h) BRIEF DESCRIPTION OF THE SEVERAL VIEWS OF THE DRAWING(S).
- (i) DETAILED DESCRIPTION OF THE INVENTION.
- (j) CLAIM OR CLAIMS (commencing on a separate sheet).
- (k) ABSTRACT OF THE DISCLOSURE (commencing on a separate sheet).
- (l) SEQUENCE LISTING (See MPEP § 2424 and 37 CFR 1.821-1.825. A "Sequence Listing" is required on paper if the application discloses a nucleotide or amino acid sequence as defined in 37 CFR 1.821(a) and if the required "Sequence Listing" is not submitted as an electronic document on compact disc).

***Claim Rejections - 35 USC § 102***

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 1-4, and 31-49 are rejected under 35 U.S.C. 102(b) as being anticipated by Barber et al. (US 6,242,989).

Regarding claim 1, Barber et al. disclose a micro-electromechanical variable capacitor (figure 7) comprising first and second capacitor plates (716 & 718) facing surfaces which are spaced apart to define a gap, and means for applying a potential difference across the gap (figure 7), at least one of the plates being movable relative to the other such that when a potential is applied across the gap the width of the gap is varied as a function of the applied potential so as to vary the capacitance of the capacitor (column 6, lines 24-31), wherein the facing surface of at least one plate has a roughened surface, the degree of roughness being sufficient to prevent the facing surfaces adhering together (figure 7).

Regarding claim 2, Barber et al. disclose the means for applying a potential difference is configured to apply the potential difference across the facing surfaces of the plates (column 6, lines 20-23).

Regarding claim 3, Barber et al. disclose the first capacitor plate defines at least one control electrode, the means for applying a potential difference being configured to

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apply the potential difference across or the at least one control electrode and the second capacitor plate (figure 7).

Regarding claim 4, Barber et al. disclose the first capacitor plate defines an active electrode on which the facing surfaces are defined (figure 7).

Regarding claim 31, Barber et al. disclose the gap between the active electrode and the second capacitor plate is less than that between each of the at least one control electrode and the second capacitor plate (figure 7).

Regarding claim 32, Barber et al. disclose the second capacitor plate is movable and the first capacitor plate is fixed (figure 7).

Regarding claim 33, Barber et al. disclose the second plate is fixable and is movable by virtue of its flexibility (figure 7).

Regarding claim 34, Barber et al. disclose the second plate comprises a pair of anchor members that are fixed relative to the first plate and an intermediate portion that is flexible and movable (figure 7).

Regarding claim 35, Barber et al. disclose the intermediate portion of the second plate is substantially planar (figure 7).

Regarding claim 36, Barber et al. disclose the facing surface of the first plate has a roughened surface (figure 7).

Regarding claim 37, Barber et al. disclose the facing surface of the second plate has a roughened surface (figure 7).

Regarding claim 38, Barber et al. disclose the roughened surface of the facing surface of the second plate is dissimilar to the roughened surface of the facing surface of the first plate (figure 7).

Regarding claim 39, Barber et al. disclose the dissimilarity is at least in part caused by the action of a sacrificial material used in the fabrication process (figure 7).

Regarding claim 40, Barber et al. the facing surface of the second plate with a roughened surface is fabricated from electroplated nickel or gold (figure 7).

Regarding claim 41, the methods step are necessitate by Barber et al. as it disclose: a method for fabricating a micro-electrochemical variable capacitor (figure 7) having first and second capacitor plates (716 & 718) defining surfaces which are spaced apart to define a gap (figure 7), and means for applying a potential difference across the gap, at least one of the plates being movable relative to the other such that when a potential is applied across the gap the width of the gap is varied as a function of the applied potential so as to vary the capacitance of the capacitor (column 6, lines 24-31), the method comprising the step of fabricating at least one plate with a roughened facing surface, the degree of roughened being sufficient to prevent the facing surfaces adhering together (figure 7).

Regarding claims 42-49, Barber et al. disclose all the claimed limitation (see, entire document).

#### **Citation Relevant of Prior Art**

5. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

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- a. Stokes (US 6,856,499) discloses MEMS variable inductor and capacitor.
- b. Liu et al. (US 6,418,006) disclose wide tuning range variable MEMS capacitor.

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Nguyen T. Ha whose telephone number is 571-272-1974. The examiner can normally be reached on Monday-Friday from 8:30AM to 6:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Dean Reichard can be reached on 571-272-2800 ext. 31. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

NH

September 4, 2000

NGUYEN T. HA  
PRIMARY EXAMINER